

# NHS Lothian Estates Confined Spaces Standard Operating Procedure



## 1. Purpose of this Procedure:

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This procedure regulates the actions to be taken by NHS Lothian Estates Dept to prevent unauthorised access to confined spaces and to ensure safety of staff when arranging work to be carried out in a confined space.

Confined space work can be fatal. No person shall enter a confined space unless it is not reasonably practicable to achieve a purpose without entry and only then by following this SOP, and any risk assessments and method statements so devised.

## 2a. The Procedure:

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### **Definition of a confined space**

Definition for the purposes of law:

A confined space is one where:

- (a) it must be a space which is substantially (though not always entirely) enclosed; and
- (b) one or more of the specified risks must be present or reasonably foreseeable.

Furthermore, a confined space may be created where an activity then takes place that introduces specified risks into the workplace. For example: where welding takes place, having the potential to consume oxygen.

If a location does not constitute a confined space, a safe system of work should still be put in place.

Examples of confined spaces include but are not limited to manholes, sewers, tunnels, excavations, storage tanks, pits, trenches, ducts, boilers, chambers, vats, silos, pits, pipes, flues and wells. Places where the introduction of bulk free-flowing solids or semi-solids could cause asphyxiation, shall be treated as confined spaces.

Specified risks include:

- Serious injury from fire or explosion.
- Loss of consciousness from increased body temperature.
- Loss of consciousness or asphyxiation arising from gas, fume, vapour, or lack of oxygen
- Drowning from an increase in the level of a liquid
- Asphyxiation arising from a free-flowing solid or being unable to reach a respirable environment due to being trapped by such a free-flowing solid

For the avoidance of doubt, asbestos enclosures and enclosures built for the control of infection, do not form part of this SOP.

### **Identification of confined spaces and means of making secure**

Confined spaces are to be identified by the Authorised Person (Confined Spaces) (AP(CS)) and a register of confined spaces is to be kept within a Confined Spaces Document Centre.

Confined spaces are to be kept secure by way of a lock/padlock that is not a generic or suited lock. The access keys are to be kept secure.

Keys shall only be issued in conjunction with a permit-to-work (PTW). A key register shall be maintained by the AP(CS).

### **Display of safety signs**

Where practicable, all confined spaces shall be identifiable by way of a safety sign, displayed at points of entry. The sign shall conform to the relevant standards for safety signs, including the use of specified colours and pictograms, as per SHTM 08-07.

### **Risk assessment process**

Work shall not be undertaken on a confined space where there is a reasonably practicable alternative to confined space entry.

A risk assessment should be undertaken prior to the start of work, to identify the hazards that may be present in the confined space together with anything that the work activity has the potential to introduce, in accordance with SHTM 08-07. The risk assessment shall also determine the required control measures for the task, including whether breathing apparatus is required.

### **Atmospheric testing**

The sequence of atmospheric testing shall be: oxygen > flammable gases > other toxic gases, vapours and dusts.

Air is normally 20.9% oxygen by volume but shall not be less than 19.5% oxygen if it is to be considered breathable. Oxygen-enriched atmospheres are dangerous and shall not be entered.

Where possible, testing shall take place external to the confined space, prior to entry.

### **Training requirements**

Ordinarily, any person seeking to gain access to a confined space shall have undertaken formal training, meeting the requirements of the AP(CS) and the Authorising Engineer (AE(CS)). In exceptional circumstances, it may be permissible for a person who has not received confined spaces training to enter a confined space provided the AP(CS) has authorised this and where that person's presence in the confined space is deemed not to constitute an exceptional risk.

The training syllabus shall be in accordance with the requirements of the AP(CS) and the AE(CS).

### **Locking-off of piped services & sources of energy**

The AP(CS) shall specify the locations and services that must be isolated prior to the start of confined space work and shall confirm that this has happened prior to the start of work.

Prior to confined space entry, services that can impose danger on entrants shall be locked-off and marked with a tag and personal lock.

A lock shall only be removed by the same person that fitted it.

### **Generic PTWs / standing instructions**

Standing Instructions shall not to be used for the control of confined space entry. A separate PTW is to be created for each task.

### **Leptospirosis warning cards / medical reporting**

Where a risk assessment has identified the possibility of leptospirosis transmission, then the exposed workers shall be briefed on (i) the locations likely to give rise to that risk, (ii) the importance of maintaining good hygiene, and (iii) the symptoms of leptospirosis.

A warning card (type HSE INDG197 or similar) shall be issued to each potentially affected person.

Any case of medically diagnosed leptospirosis shall be recorded on DATIX and reported to HSE (RIDDOR) by the AP(CS).

### **Medical standard**

Individuals that are to enter a confined space shall be medically fit. Specifically, persons suffering from heart disorders or high blood pressure, fainting, blackouts, loss of balance, asthma or bronchitis, back pain or claustrophobia shall not undertake confined space work.

NHS Lothian staff shall be assessed beforehand by the Occupational Health Service and at intervals not exceeding three years where breathing apparatus is used. Assurances shall be sought from contractors regarding the medical fitness of their staff.

### **Entry points & rescue**

The AP(CS) shall put in place arrangements for the entry and exit of the personnel to/from the confined space. The AP(CS) shall ensure that any entry/exit points are sufficiently large so as to allow for the rescue of injured/collapsed persons, including any harnesses or breathing apparatus that they might be wearing.

The AP(CS) shall also ensure that there is a means of rescue, for example, via lanyard, or by the entry of a rescue team to haul-out the affected person.

There shall be first aid arrangements in place, consisting of a trained first aider, a first aid kit and the means of telephoning for an ambulance or hospital crash team where appropriate.

Where identified as appropriate, the AP(CS) shall procure the services of a confined space specialist rescue service.

For the avoidance of doubt, the services of the fire and rescue service are not to be relied upon as the first means of rescue, but should be considered as a backup to the rescue arrangements that are in place at the work site. The AP(CS) shall undertake liaison with the fire and rescue service in advance of difficult or high risk confined space activities.

### **Fire & first aid provision**

The AP(CS) shall specify the arrangements for the confined space works in relation to fire and first aid provision.

The PIC shall ensure that the work site is equipped with the relevant fire fighting equipment. The PIC shall also ensure that the work site has a first aid kit.

### **Document centre**

The AP shall maintain a document centre, in a secure location for his/her site, that shall have on file the following documents:

- the Confined Spaces Register;
- confined space permit pads;
- risk assessments / method statements; and
- other standard forms for confined spaces.

The Document Centre is to be a lockable drawer or cabinet.

### **The Confined Spaces Register**

The Confined Spaces Register shall include the location and general description of each confined space together with a note of hazards and a risk assessment.

A confined spaces operational register shall be maintained, giving a chronological account of each confined space entry.

### **Unplanned access (emergency access) to a confined space**

Should circumstances requiring an unplanned access arise, the conditions set out in this procedure shall remain in force and the person requiring entry shall make contact with the AP(CS) regarding the arrangements for safe entry.

## **2b. Roles of Specific Persons:**

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### **Role of Estates Area Managers**

A management structure shall be implemented in accordance with SHTM 08-07 section 4.

Estates Area Managers shall assist the AP(CS) by preventing unauthorised access to confined spaces and in the marking of confined spaces.

Any incidents involving confined space entry shall be reported on the NHS Lothian incident reporting system (DATIX) for investigation. The AE(CS) shall be notified of any such incidents.

### **Role of the Authorised Person (Confined Spaces) – general**

The AP(CS) shall collate a confined spaces register, together with a register of keys used for securing confined spaces only.

The AP(CS) shall survey premises under their control and affix warning labels to doors of compartments etc warning of confined space. Where practicable, doors to compartments shall be kept locked shut using a key that is reserved for that purpose and not a generic key, and manhole covers shall be kept closed so as to prevent entry to unauthorised persons.

Having regard to the hazards outlined and having decided to undertake entry into a confined space, the AP(CS) for confined spaces shall be in charge of entry into the confined space.

The AP(CS) shall produce a site-specific safe system of work together with a risk assessment, listing mitigating measures, including but not limited to:

- Supervision arrangements.
- Competence, training and instruction of the workforce, and the appointment of competent persons for the roles of person-in-charge, safety attendant and the work team.
- Atmospheric testing, specifically to check the oxygen content and for toxic gases.
- Purging of hazardous atmospheres prior to entry and the subsequent testing of the atmosphere prior to entry.
- The use of fans, blowers etc to provide a safe and breathable atmosphere.
- Rescue arrangements, including the procurement of rescue services from competent confined space rescue providers where required.
- Whether it is necessary to introduce fresh air into the confined space.
- The arrangements for escape breathing apparatus.
- Communication and emergency signalling arrangements.
- The lock-off of piped water, steam, gases, electrical and other services.
- A prohibition on smoking and the use of petrol-powered equipment.
- A prohibition on taking equipment into the work area that is not constructed to the required standard for a confined space.
- Fire precautions.
- Precautions against musculoskeletal disorders, such as time limits when working in cramped locations.
- Any personal protective equipment deemed necessary, for example, safety eyewear.
- Any other relevant permits, such as a hot works permit, taking care to follow the conditions as set out.
- Maintenance of a document centre for confined spaces.

### **Role of AP(CS) – prior to entry**

The AP(CS) shall inspect the arrangements and shall satisfy themselves that the personnel are fit and competent to enter, that any atmospheric testing has been completed, that there are

arrangements in place for the rapid rescue of collapsed or injured persons, that breathing apparatus is clean, in working order and that air hoses are not damaged or obstructed.

Should the AP(CS) have doubt as to the capability of any person involved in the work activity, whether of a competence or medical nature, then the work activity shall be stopped.

### **Role of NHS Lothian Occupational Health Service**

The Occupational Health Service is to assess employees nominated by the AP(CS) for fitness to work in confined spaces. The Occupational Health Service shall also advise on the requirement for vaccinations against relevant infectious diseases.

### **Duties of all persons**

Nobody shall enter a confined space unless specially authorised by way of a confined spaces PTW. (See Appendix for a specimen permit-to-work.)

Any person that is in possession of a leptospirosis warning card, shall show the card to a medical practitioner upon the onset of illness.

Any person that requires access to a confined space shall firstly, consider a reasonably practicable alternative to confined space entry, and secondly, if confined space entry remains necessary, make contact with the AP(CS) regarding the arrangements for safe entry.

### **Role of Authorising Engineer (Confined Spaces)**

The AE(CS) shall audit the confined spaces system, including assessing the competency of any AP(CS) proposed for appointment and the scope and security of places identified as confined spaces.

### **Role of the Person-in-Charge (Confined Spaces)**

The PIC(CS) shall control the access point to a confined space. The PIC(CS) shall control the issue of documentation and shall ensure that the work activity is carried out in accordance with the safe system of work set out in the PTW.

The PIC(CS) shall undertake pre-entry atmospheric testing. A record of atmospheric testing shall be retained.

The PIC(CS) shall remain at the works until the work programme has been completed. Should the PIC(CS) be called away to attend to matters unrelated to the works, then the work shall be suspended and the operatives withdrawn.

Any subsequent start-up of work following an interruption shall involve repetition of any specified atmospheric testing.

The PIC(CS) shall recognise danger, bringing the work activity to a stop and withdrawing the personnel if necessary. The PIC(CS) shall summon the assistance of other persons including the emergency services if required.

### **Role of the Safety Attendant**

The safety attendant is to position themselves at the access point and is to observe the work activity at all times, monitoring any communications given by the work team and shall summon rescue services should an emergency condition arise.

The safety attendant shall also monitor any air supplies and should the air supply become interrupted, shall stop the work activity, ensuring that the work team leaves the confined space.

### **Role of the Work Team and Team Leader**

The work team is to carry out the designated activity in accordance with the safe system of work and the PTW.

Prior to entry, one member of the work team shall take on the role of the team leader, and shall control the activity whilst ensuring that effective communications are maintained with the safety attendant at all times.

### **Separation of duties**

Note that the duties of the AP(CS), PIC(CS), safety attendant and work team leader are to be performed by separate persons.

To prevent the potential for conflicts of direction, only one AP(CS) is to be involved in the operation of each confined space entry at any one time.

## **3. Associated Materials & References:**

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Health & Safety Executive, Leptospirosis Warning Card INDG197.

Health & Safety Executive, Safe Use of Oxygen INDG459.

Health & Safety Executive, Safe Work in Confined Spaces, Approved Code of Practice L101.

Ministry of Defence, Health & Safety Handbook JSP 375 Vol 3 Chapter 6 – Confined Spaces.

Scottish Health Technical Memorandum SHTM 08-07, Confined Spaces policies, procedures and guidance, Health Facilities Scotland, 2015.

## Appendices

Standard forms shall be in accordance with SHTM 08-07, as set out in the Appendices to this procedure, available at: [https://policyonline.nhsllothian.scot/Policies/Procedure/Confined\\_Spaces\\_SoP\\_Appendices.pdf](https://policyonline.nhsllothian.scot/Policies/Procedure/Confined_Spaces_SoP_Appendices.pdf)

Form 1 – Confined Spaces Register

Form 2 – Confined Spaces Operations Record

Form 3 – Confined Spaces Equipment Register & Information Record

Form 4 – Confined Spaces Equipment Inspection Record

Form 5 – Confined Spaces Key Register

Form 6 – Key Tallies and Safety Signs

Form 7 – Leptospirosis Warning Card

Form 8 – Confined Spaces Risk Assessment Form

Form 9 – Confined Spaces Safe System of Work

Form 10 – Confined Spaces Permit-to-Work

Form 11 – Sample letter to occupational health service

Form 12 – Sample Pro-Forma to attach to letter to Occupational Health Service